

PATENT SPECIFICATION

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DRAWINGS ATTACHED



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(54) DOUBLE WALLED DRINKING CUP

- (71) We, MONO CONTAINERS LIMITED, a Company registered under the Laws of Great Britain, of Malt House, Field End Road, Eastcote, Ruislip, Middlesex, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement. —
- 10 This invention relates to double-walled drinking cups formed from sheet plastics material. Frequently the material will be high-impact sheet polystyrene and normally the cups will be deep drawn by a vacuum method from heated sheet material.
- 15 According to the invention a double-walled cup has its double wall formed by virtue of having an inner and an outer each with a bottom and a side wall, the two side walls being spaced apart to leave an insulating region to prevent too easy transfer of heat from the inside to the outside of the cup or vice versa, and the bottoms being in contact with one another over a major part of their area.
- 20 The drinking cup may also have any one or more of the following features.
- 30 One feature is that the inner has a shoulder for seating on a shoulder formed at the top of a downwardly and outwardly divergent side wall portion of the outer cup.
- 35 A second feature is that the inner has an inner shoulder for supporting a shoulder formed at the bottom of a downwardly and outwardly divergent side wall portion of the outer of a similar cup nested within the said cup. It may be the same downwardly and outwardly divergent portion referred to in the first feature.
- 40 A third feature is that the inner and outer are in line or area contact at or near the bottoms of the side walls or there may be a separate insulating space left between them in this region for example in the angle of a downwardly and outwardly divergent side wall portion of the outer.
- 45 A fourth feature is that the inner has a central upward protuberance in its bottom for supporting the bottom of the outer of a nesting cup.
- 50 A fifth feature is that the inner is seated on a local inward deformation of the outer.
- 55 A sixth feature is that the outer has a nesting shoulder facing downwards and positioned near the top of the outer for resting on the top of the inner of a lower cup in which the cup is to be nested.
- 60 Reference may be made to our two co-pending applications which have been divided from the present application. These are Application No. 36324/71 (Serial No. 1,261,532) which describes and claims a double walled cup having its double wall formed by virtue of having an inner and an outer each of sheet material formed with a bottom and a side wall, the two side walls being spaced apart to leave an insulating region to prevent too easy transfer of heat from the inside to the outside of the cup or vice versa, the bottom of the side wall of the inner being in contact with the side wall of the outer to provide location between the inner and outer laterally of the cup axis, and the bottom of the inner being spaced from the bottom of the outer in a region near the bottoms of the side walls to provide an insulating space. Application No. 36325/71 (Serial No. 1,261,533) describes and claims a double walled cup having its double wall formed by virtue of having an inner and an outer each of sheet material formed with a bottom and a side wall, the two side walls being spaced apart to leave an insulating region to prevent too easy transfer of heat from the inside to the outside of the cup or vice versa, the two bottoms being spaced from one another in a region adjacent the bottom of the side walls and the two bottoms being in contact at their centres.
- 80 Figure 1 shows in section a double walled drinking cup and the lower part of a nesting cup;
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Figure 2 shows a detail section of an alternative form of cup; and

Figure 3 is a view corresponding to Figure 1 of a modification.

5 The cup shown in Figure 1 is a double walled cup having an outer 11 and an inner 12 each formed from high impact sheet polystyrene by vacuum deep drawing. The outer has a slightly outwardly turned flange 13 at the top and the inner has a curled over rim 14 which engages under the flange 13 to hold the parts together, and leave an air space 15 between the side walls. The bottoms are flat and in contact over the major part of their area as shown at 16 and 17.

The inner has an inward horizontal shoulder 18 which is united with the bottom by a cylindrical portion 19. The outer has an inward shoulder 21 extending under and supporting the shoulder 18 on the inner and joined to the bottom 16 by a downwardly and outwardly divergent portion 22. There is thus an insulating air space 23 between the side walls at the bottom and above the rim of the bottom of the outer.

It can be seen that the nesting cup rests in the lower cup by virtue of the bottom 16¹ being seated on the ledge formed by the upper surface of the shoulder 18.

30 The cup shown in Figure 2 is similar, but in this case, below the shoulder 18 the inner extends downwardly and outwardly as shown at 25 to join a portion 26 in contact with the lower part of the side wall 27 of the outer. This part 27 is joined to the main part of the side wall by a short horizontal shoulder 28 which carries the shoulder 18 of the inner. In this case there is no insulating air space between the inner and the outer at the edges of the bottom but they are in contact throughout their area although each has an upward central recess as shown at 29.

In Figure 3 the side walls 11 and 12 of both outer and inner extend parallel with one another as far as the bottoms and there is no nesting shoulder in the side wall. The inner has an upward central protuberance 31 on which can be seated the flat bottom 32 of a nesting outer. This design facilitates the formation of vertical gripping or stiffening ribs which may extend substantially throughout the height of the cup as shown at 33 or throughout a finger grip portion rather near the top as shown at 34. The vertical ribs could be in the outer or in the

inner or both. The inner and the outer are in contact over the major part of their area.

WHAT WE CLAIM IS:—

1. A double-walled cup having its double wall formed by virtue of having an inner and an outer each of sheet material formed with a bottom and a side wall, the two side walls being spaced apart to leave an insulating region to prevent too easy transfer of heat from the inside to the outside of the cup or vice versa, and the two bottoms being in contact with one another over a major part of their area.

2. A cup as claimed in Claim 1 in which the inner has a shoulder for seating on a shoulder formed at the top of a downwardly and outwardly diverging side wall portion of the outer.

3. A cup as claimed in Claim 1 or Claim 2 in which the inner has an inner shoulder for supporting a shoulder formed at the bottom of a downwardly and outwardly divergent side wall portion of the outer of a similar cup nested within the said cup.

4. A cup as claimed in any of the preceding claims in which the inner and the outer are in line or area contact at or near the bottoms of the side walls.

5. A cup as claimed in any of the preceding claims including a closed insulating space between the inner and the outer near the bottoms of the side walls.

6. A cup as claimed in any of the preceding claims in which the inner has a central upward protuberance in its bottom for supporting the bottom of the outer of a nesting cup.

7. A cup as claimed in any of the preceding claims in which the inner is heated at a local inward deformation of the outer.

8. A cup as claimed in any of the preceding claims in which the outer has a nesting shoulder facing downwards and positioned near the top of the outer for resting on the top of the inner of a lower cup in which the cup is to be nested.

9. A double-walled drinking cup constructed and arranged substantially as herein specifically described with reference to any one of the figures of the accompanying drawings.

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